

National Ignition Facility Management Descriptions, Revision 8

E. Moses

May 1, 2002

U.S. Department of Energy

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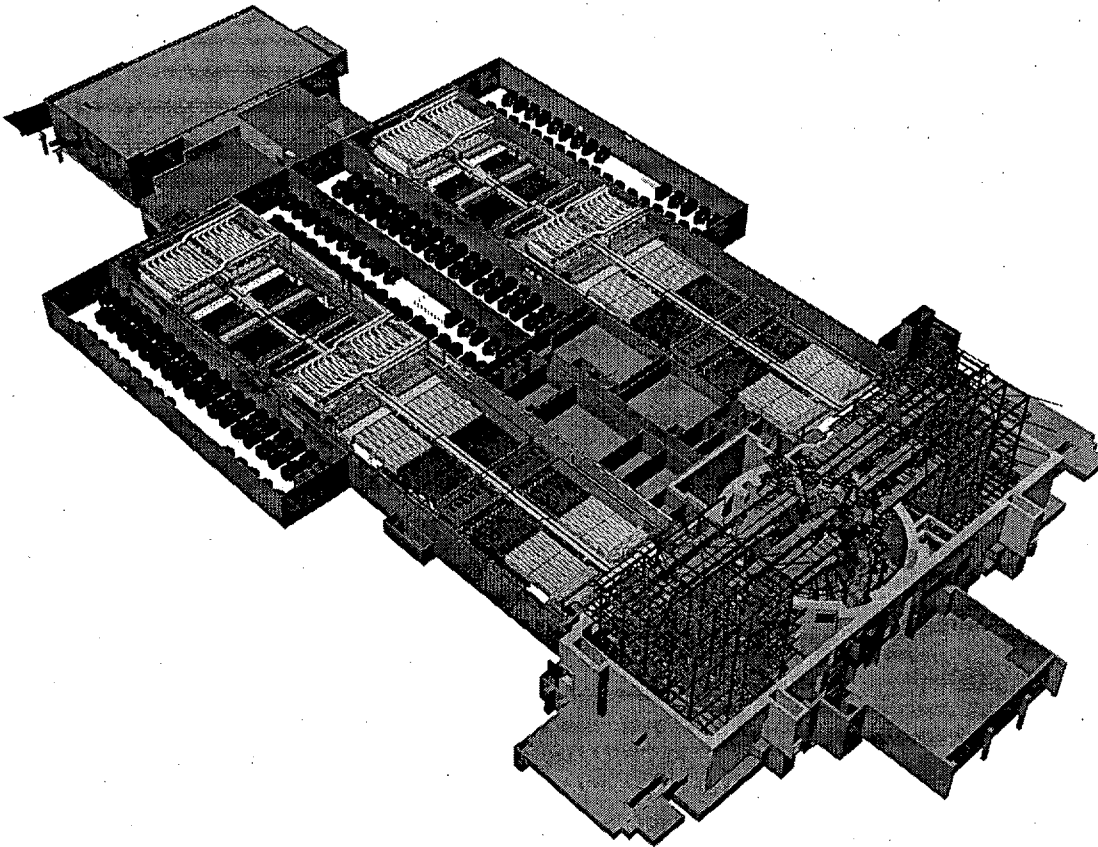
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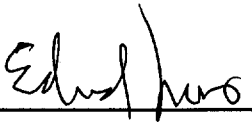
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A handwritten signature in black ink, appearing to read "Edward I. Moses", is written over a horizontal line.

Edward I. Moses

May 2002

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National Ignition Facility Management Descriptions

Revision 8

Purpose

The purpose of this document is to describe the National Ignition Facility (NIF) Project Organization and the top level roles and responsibilities of the managers charged with executing the Project.

The NIF Project Organization

The NIF Project Organization is shown in Figure 1. This organization reflects the NIF business model, which is similar to that found in aerospace and other high technology organizations. In this model, the Project Office may be viewed as the funding agency, having overall responsibility for delivering a NIF that meets the approved project technical cost and schedule baseline. The baseline includes applicable federal (Department of Energy [DOE]), state, regional and Lawrence Livermore National Laboratory (LLNL) regulations and requirements. The NIF systems, subsystems, and components are supplied by the NIF Associate Project Managers (APMs) for Products. In this respect, these APMs function as project contractors who have "cradle to grave" responsibility for their products. Many NIF systems consist of products supplied by multiple APMs. Integrated Product Teams (IPTs) have been established to provide an integrating contractor function for these situations. As the NIF is assembled to higher levels of integration encompassing the responsibilities of multiple IPTs, Area Integration Managers (AIMs) serve as general integrating contractors. Systems Engineering/Mission Support is the project organization responsible for the ultimate integration of the NIF, from requirements through commissioning.

As the NIF systems are activated, the Commissioning function is responsible to assure the Operations Manager through appropriate testing and review that systems meet their functional, operational, and safety requirements.

During installation, assembly, and test work, the AIMs, Site Manager, and appropriate APMs provide integrated planning and management oversight of work in the NIF Facility. AIMs or Field Area Managers reporting to the appropriate AIM, are responsible for oversight and coordination of day-to-day work within the NIF Facility. The Site Manager provides global facility oversight and serves as primary Facility Point of Contact (FPOC).

Other NIF organizational elements provide management of the processes utilized to execute the Project. These include Engineering Services, Laser Equipment Production, and Commissioning and Operations. The Associate Project Managers for these organizations are charged with promulgation of requirements, work processes, and procedures; provision of engineering, production, and refurbishment services; and integrated planning for commissioning and operation.

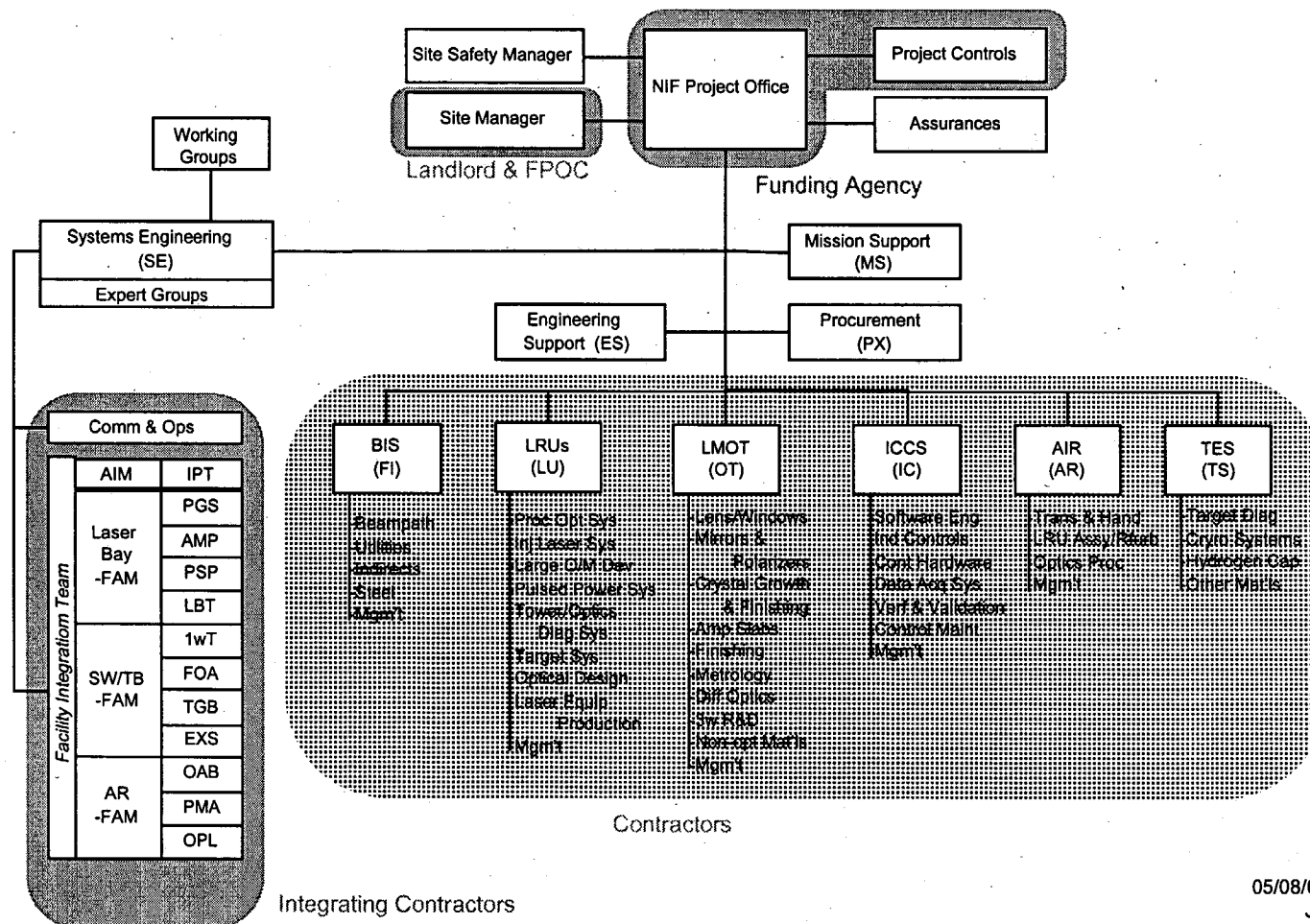
The NIF Project Manager is assisted by Deputy Project Managers, who have been assigned specific oversight responsibilities as delineated in this document. In addition, Assistant Project Managers provide project control, coordination, and special project support to the Project Manager and his deputies.

A project office staff provides administration, financial management, and assurances functions. Within LLNL, the NIF Project resides in the NIF Directorate. The NIF Programs Directorate Office provides personnel management, facilities support, public relations, and umbrella environmental safety and assurances support.

NIF Project Organization



The National Ignition Facility



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Roles and Responsibilities

Project Manager

The Project Manager reports to the Associate Director of NIF Programs and is responsible to:

- Execute the Project and direct the participating laboratories and industrial contractors such as architect engineers, construction managers/general contractors, equipment vendors, and other industrial firms.
- Oversee all research and development programs required to successfully complete the NIF Project.
- Establish, maintain and control the NIF baseline (technical, cost, and schedule) in accordance with the Project Execution Plan, and report status to the NNSA in a timely manner.
- Interface with the NNSA Director, Office of the NIF Project, and the Deputy Director/NIF Field Manager.
- Supported by the Assurance Office, ensure that the NIF Project meets all applicable Department of Energy (DOE), Federal, State, and Regional ES&H, Quality Assurance, and security requirements.
- Assure that NIF Project work is conducted under the principles and requirements of the LLNL Integrated Safety Management (ISM) system and NIF Project Control Procedure 1.11 and assure that adequate funding is available to administer and execute this safety program.
- Serve as the Authorizing Individual (AI) for the NIF site. The Project Manager may delegate the responsibility and authority of the AI to lower-tier NIF Project managers as appropriate, and shall assure that these individuals are knowledgeable of their ISM duties and responsibilities.
- Assure that all Project members are trained and qualified to perform their assigned tasks and ensure that all required ISM-related training is provided.

Deputy Project Managers

Three Deputy Project Managers have been established to assist the Project Manager in the execution of his duties. They may be delegated the authority to act for him in his absence. They serve as a management team and are involved in all aspects of the management of the Project, but have also been delegated specific oversight responsibilities.

The **Deputy Project Manager—Chief Technical Officer** is responsible for technical quality assurance and will:

- Manage the Systems Engineering organization, including the activities of the senior project scientific staff.
- Oversee technical integration activities of the project, including establishment and flowdown of requirements, interfaces, configuration management, commissioning and operations planning, performance, and risk mitigation.
- Establish and conduct a risk identification, evaluation, and mitigation program.
- Co-chair the Level 4 Change Control Board.
- Serve as a member of the Level 3 Change Control Board.

The **Deputy Project Manager—Chief Operations Officer** is responsible for oversight of the product line organizations and cost and schedule and will:

- Oversee/coordinate the project execution activities of the Associate Project Managers.
- Oversee the financial management and project controls activities.
- Conduct status reviews and oversee external reporting.
- Interface with the LLNL Institution and DOE/NNSA on all Project control and financial matters.
- Co-chair the Level 4 Baseline Change Control Board
- Serve as a member of the Level 3 Change Control Board.

The **Deputy Project Manager—Assurances** is responsible for oversight of all Project assurance activities and will:

- Oversee/coordinate the Quality Assurance (QA), ES&H, and ISM activities in the Project.

- Develop and implement procedure policies for project assurances.
- Lead the preparation of National Environmental Policy Act (NEPA) documents working with the DOE/NNSA (e.g., Supplemental Environmental Impact Statement and Supplemental Analyses).
- Serve as the interface with the DOE in their compliance audits.
- Interface with the Department of Justice, DOE General Consul, and LLNL Consul on all NIF-related litigation.
- Work with the Deputy Project Manager/Chief Operating Officer and the Associate Project Managers to prepare the Project status report.
- Serve as a member of the Level 3 Change Control Board.

Assistant Project Manager

The NIF Assistant Project Manager, reporting to the Project Manager, provides assistance to the Project Manager and Deputy Project Managers as part of the senior management team. Responsibilities include planning and coordinating Project Office activities, assisting the Project Manager and Deputy Project Managers in the execution of their duties, acting on behalf of Deputy Project Managers as delegated in their absence, and managing special projects as assigned. In addition, the NIF Assistant Project Manager will:

- Coordinate and integrate the cost and schedule baselines and the related core documents, including Baseline Change Proposals, Project Data Sheets, Control Account Plans, the Project Execution Plan, and the project Master Schedule.
- Manage and coordinate the development and implementation of project planning, control processes, configuration management, including milestones and technical performance goals and other indicators that have been identified to accurately measure performance against the baseline.
- Manage the monthly status review and external reporting process.
- Serve as the primary Project contact for formal reporting of Project activities to DOE/NNSA-HQ, DOE-OAK, and other sponsors as appropriate.
- Support the NIF Program Associate Director's office as required.

Systems Engineering/Mission Support Manager

The Systems Engineering/Mission Support Manager reports to the Project Manager for NIF Project matters through the Deputy Project Manager-Chief Technical Officer and is responsible to:

- Oversee the technical integration activities of the project including risk management, system performance, area integration and interface control, and commissioning and operations planning.
- Ensure that the Project will fulfill the Primary Criteria/Functional Requirements (PC/FR) including consistent flowdown of requirements to the System Design Requirements (SDR) and Subsystem Design Requirements (SSDR) and the Interface Control Documents (ICDs) working through the Area Integration Managers.
- Form and maintain working groups (e.g., cleanliness, back reflection) to resolve and monitor disposition of key issues and oversee the Material Review Board (MRB) process.
- Integrate NIF experimental science with Facility Commissioning and Operations and work closely with the Experimental Planning Advisory Committee (EPAC) to assure appropriate use of NIF.
- Provide integration direction and coordination through the AIMs and the Integrated Product Teams (IPTs).
- Ensure that System Engineering members are trained and qualified to perform their assigned tasks and that the Commissioning Manager, Operations Manager, AIMs, and IPT Leaders are trained and qualified for their role as delegated AIs.

Operations Manager

The Operations Manager, in conjunction with the Commissioning Manager, provides the integration, transition and verification management from commissioning tests to an operating NIF. The Operations Manager is focused on assuring that commissioned systems meet their performance and operational requirements or that there is an approved plan to meet those requirements. The Operations Manager reports to the Systems Engineering/Mission Support Manager and is responsible to:

- Ensure that Commissioning and Shot Operations procedures are prepared and used.
- Serve as the AI for Integration Work Sheets (IWSs), Operational Safety Procedures (OSPs), and other safety documents associated with NIF operations in B581 when designated to do so by the Project Manager.
- Be a voting member of the Level 4 Change Control Board, reviewing all change requests with respect to effects on commissioning and long-term operations.
- With the ES&H Assurance Manager, co-chair the Safety & Performance Review Board process (including the Management Prestart Review [MPR]).
- With the QA Manager, ensure that QA/QC requirements are defined and met in all operations activities. This includes the implementation of 10CFR830 Subpart A.
- Assure that all operations workers are trained and qualified for their responsibilities.
- With the Quality Assurance Manager, develop a quality training and orientation program for Project personnel.
- Assure that the Authorization Basis and required environmental permits for the B581/681 complex are in place.

Commissioning Manager

The Commissioning Manager in conjunction with the Operations Manager provides the integration, transition, and verification management from subsystem acceptance tests to a fully commissioned NIF. The Commissioning Manager is focused on verifying that NIF systems meet their functional and operational requirements or that a plan is prepared and approved for the receiving organization to meet these requirements. The Commissioning Manager reports to the Systems Engineering/Mission Support Manager and is responsible to:

- Prepare and execute the NIF Commissioning Plan, the master plan for commissioning and transitioning to operations of B581/681. The plan shall, at a minimum, include roles and responsibilities, transfer of responsibility through the Safety and Performance Review Board (S&PRB) process, and commissioning steps and schedules.
- Coordinate the activities of the AITs, IPTs, and APMs in the performance of the commissioning tests such as the integrated laser tests.
- Serve as the AI for IWSs, OSPs, and other safety documents associated with commissioning in B581 when designated to do so by the Project Manager.
- With the QA Manager, ensure that QA/QC requirements are defined and met in all commissioning activities. This includes the implementation of 10CFR830 Subpart A.

Area Integration Managers

Area Integration Teams (AITs) have been established for the laser bay, switchyard/target bay, control rooms, and assembly/refurbishment areas to lead the integration of all planning and execution activities necessary to deliver a commissioned and fully dispositioned system to NIF operations. Additional AITs may be established as necessary. Each AIT is lead by an Area Integration Manager (AIM). The AITs include applicable Integrated Product Team Leaders and other designated individuals who may be required to deliver an area's commissioned systems. The AITs report to the Systems Engineering/Mission Support Manager and are responsible to:

- Ensure that a well coordinated, unified plan is developed and executed to deliver their areas systems. This includes CAPs, NPS/IPS plans, and work interface agreements. In this regard, the AIM is responsible to ensure that the plan, including detailed IPT sub-plans, represents balanced technical, cost, schedule and organizational risks.
- Ensure that the plans for all individual areas integrate into a seamless whole.
- Ensure the integrity of requirement flowdown from Primary Criteria/Functional Requirements to Subsystem Requirements and Interface Control Documents to design, procurement, and commissioning documentation for the systems in their respective areas. This responsibility includes intra-area interface control documentation.
- Determine if a significant new risk is presented by an upcoming work activity and execute their responsibilities to the Safety and Performance Review Board (NIF Project Procedure 9.3).
- Appoint Field Area Managers (FAMs) as and when appropriate to coordinate day-to-day work in their areas.

- Review and concur with all Control Account Plans (CAPs) in his/her respective area before final submission and consideration for approval by the Project Office.
- Be a voting member of CCB4 and serve on design, procurement and other relevant review teams.
- Ensure that quality is maintained within critical systems by reviewing and approving the Quality Level determinations and tracking the verification and validation of the Level 1 and 2 items.
- Serve as the AI when so delegated by the NIF Project Manager in accordance with the NIF Project Implementation of ISM in B581. The NIF Project Manager may authorize the AIM to designate AIs in his/her area.

Field Area Managers

Field Area Managers (FAMs) have the responsibility and authority to coordinate all work within their assigned area. As such, the FAM is the day-to-day, on-site representative of his/her AIM. They report to the AIM responsible for their area and are responsible to:

- Execute the plan for their area, developing detailed lower level near term plans as needed.
- Interface with the Site Manager and IPT leaders as appropriate to resolve conflicts, interferences, and work priorities within their assigned areas.
- Define and control interfaces between areas with the other FAMs and resolve potential activity interferences.
- Concur on work to be performed within their assigned area prior to its commencement.
- Ensure that the assigned area activities are planned, hazards evaluated, and effort coordinated through the use of Job Hazards Analysis (JHA) and/or OSP procedures, SPAs, and other core work procedures.
- Be responsible for control of safety in their assigned area and monitor compliance to Safe Plan of Action (SPA) procedures.
- Ensure that facility procedures for safety (set forth in the NIF Project Site Safety Program [NPSSP] and subtier safety plans and procedures), QA, and work processes are followed.

Integrated Product Teams

An Integrated Product Team (IPT) is a multidisciplinary, multiorganizational, interdependent team assembled to lead and integrate all activities necessary to deliver a commissioned and fully dispositioned system to the NIF operations organization. In this context, a fully dispositioned system is one that meets all the performance and operational requirements of the specified functionality of that system or has an approved plan to reach these requirements through the activities of the receiving organization (i.e., Commissioning & Operations). An IPT consists, at a minimum, of the IPT Leader (and designated alternate), all CAP Managers (and/or designees), and the systems engineering representative associated with the IPT's NWBS activities. Step representatives, project control representatives, assurance management representatives, contractors, and consultants may be included as required. It is the primary role of the IPT to facilitate communication among team members and effect timely decision making in the Project. The IPTs report to the Systems Engineering/Mission Support Manager through their respective AIM.

- Each IPT and all IPT members shall work creatively and aggressively to move the Project forward within the constraints of the approved baseline project plan, the detailed sub-plan for their products and the Project Control Manual.
- Each IPT will diligently stay informed in overall project and IPT matters to keep their IPT on track.
- The IPT Leaders shall:
 - Be responsible for the integrity of the plans and contractual relationships among all parties in the IPT. This includes evaluating and coordinating milestones, CAPs, ICDs, and the NIF Planning System/Integrated Project Schedule (NPS/IPS) plans associated with their NWBS elements.
 - Through and with the support of Systems Engineering, collect and validate requirements (SSDRs and ICDs) for their NWBS elements and maintain an active risk list for their NWBS elements and the status of risk mitigation activities under way for those risks.
 - Serve as CCB5 for the IPT area to ensure that ECRs have been properly reviewed by the team and all consequences to the team have been considered and agreed upon before going to CCB4.
 - Actively participate in oversight of work activities in the facility to ensure that their IPT is on track.

- Attempt to resolve budgetary and schedule issues within their IPT. IPTs are the preferred path for change requests (ECRs, BSCRs) and Nonconformance Reports (NCRs) through the authority of project-approved CCBs and MRBs.
- Have the authority and responsibility to review and concur with all CAPs within their respective team before concurrence by their AIM.
- Serve as an AI when so delegated by the NIF Project Manager or the responsible AIM in accordance with the NIF Project implementation of ISM.
- Responsible to concur on all applicable IWSs from the perspective of systems integration when not serving in an AI capacity for the subject IWS.

Site Manager

The Site Manager is appointed by the Facility AD. The Site Manager is responsible for the care, custody, and control of the Conventional Facilities, including development and implementation of a comprehensive program to assure readiness for technical missions. The Site Manager reports to the NIF Project Manager and is additionally responsible to:

- Serve as the primary Facility Point of Contact (FPOC). The Site Manager may appoint alternate FPOCs, assuring that they are trained and qualified for that responsibility.
- Control access requirements and access to the NIF site. This includes safety, security, and training requirements.
- Interface with the institution (e.g., Plant Engineering) as necessary to support the work activities on the site.
- Assure that the NIF facilities are operated in accordance with the NIF Programs Directorate Integrated Safety Management System Implementation Plan, *NIF-0054160*, and the NPSSP.
- Serve as AI for site areas delegated by the Project Manager.
- Ensure that the Site Emergency Preparedness Plan and provisions are effective and current.
- Establish an Injury Management Plan.
- Verify that safety requirements are met for contractors/subcontractors, including all worker safety education and orientation requirements.
- Develop safe work recognition and disciplinary programs.
- Review the results of the incident investigations and audits for compliance, for recommendations made for correction and prevention of recurrence, and for follow-up measures taken to develop compliance.
- Ensure that the overall site environmental permits are carried out working with the ES&H Assurance Manager (e.g., Storm Water Pollution Prevention Plan for the NIF site).

Site Safety Manager

The NIF Site Safety Manager is a resource to and works closely with NIF line management in carrying out their NIF Site responsibilities leading to world-class safety based on a continuous improvement process. This key position reports to the NIF Project Manager. The NIF Site Safety Manager directs the Site Safety Team and works toward maximizing their effectiveness in supporting line management. This includes providing management with uniform and consistent guidance in a timely manner on interpretation and implementation of rules, codes, and standards. This position is the single point contact and interface to NIF Project and NIF Program Assurances and the Laboratory on all aspects of NIF Site Safety. The responsibilities and activities of this position are to:

- Advise and make recommendations to line management and participate in the uniform and consistent application of safety standards to all site workers and participants. Identify and develop opportunities to improve site safety.
- Provide line management with a strategic view of NIF Site safety. Work for broad participation in site safety and encourage all employees to strive for excellence in safety. Through a continuous improvement process, work toward sustained cultural changes that make NIF a safe place to work while minimizing the risk of project delay or shutdown due to safety deficiencies.
- Review Site safety standards for adequacy, completeness, and clarity. Update and revise as necessary.

- Chair the NIF Site Safety Council that advises line management and makes appropriate recommendations on worker safety and health issues at the NIF Site. The Site Safety Council, established by the Project Manager, at a minimum includes the NIF Project Assurances Coordinator, the NIF ES&H Assurance Manager, the NIF Program Assurances Manager, the BIS Safety Manager, the Jacobs/IMI Safety Manager, and the Hazards Control Team 2 Deputy Team Leader.
- Lead or participate in safety reviews, assessments, or studies as may be requested by line management.
- Interface and coordinate with the Laboratory, DOE/OAK, NIF Project Assurances and NIF Program Assurances on all aspects of NIF Site safety. Through an outreach program, communicate the NIF Standards and expectations for new program and Laboratory site workers before they begin work.
- Manage the Site Safety Team, which includes Hazards Control Team 2 personnel, the Laser Safety Officer, the Electrical Safety Officer, the Jacobs/IMI Safety Team, and subcontractor safety representatives. Integrate the Laboratory and contractor safety teams for maximum effectiveness.
- Direct the on-site activities of Hazards Control Team 2.
- Monitor, review, and assist line management in auditing safety performance. This includes systematically reviewing the effectiveness of site safety and overseeing the Weekly Line Management Audit.
- Review and analyze site safety records and data for trends. Communicate this information and work with line management and safety support to make improvements as required.
- Oversee the Incident Review process and participate as appropriate. Review reports for adequacy and completeness, maintain records, and review and track closeout of findings and recommendations.
- Coordinate with the Laboratory on case management of Laboratory employees.
- Oversee site contractor case management working with managers, supervisors, the medical community, and the site Emergency Medical Technician, AON, and Liberty Mutual on end-to-end case management of medical claims.
- Responsible for the site Owner Controller Insurance Program (OCIP). Work with line management, LLNL, AON, Liberty Mutual, and the Parsons Labor Relations Specialist to ensure a cost effective OCIP that minimizes project risk.
- Manage the NIF Site Safety Recognition and Awards program. Establish criteria and eligibility and work toward maximizing the effectiveness of employee recognition and awards in improving safety.
- Identify significant national, state, and organizational safety recognition/awards and work with NIF Project/Program, the Laboratory, UC, and DOE to apply for and obtain appropriate recognition and awards.
- Manage the NIF Site Safety Awareness program. Through posters, flyers, handbooks, communication, and recognition promote safety and keep it at the forefront of site workers.
- Review site-specific training requirements and material and conduct and participate in training as required.
- Review and concur on all site safety related procedures. Concur as appropriate on documents and authorizations that pertain to site safety such as JHAs, Critical Lift Plans, and Work on Energized Equipment Permits.
- Support the Safety and Performance Review Board and the AIMS, as requested on site safety-related issues.

Associate Project Managers—NIF Products

The Associate Project Managers are responsible for the scope, schedule, budget, and technical and safety performance for their assigned NWBS elements. Associate Project Managers report to the NIF Project Manager and are responsible to:

- Design, procure, install, and acceptance test (as appropriate) NIF Systems, Subsystems and Components (SSCs) that perform to their documented and approved requirements..
- Document and control through the change control process, the flow down requirements that form the basis for their assigned NWBS element.
- Work with the IPTs, AIMS, and Systems Engineering to support interface control and other engineering integration activities (e.g., Reliability, Availability and Maintainability; cleanliness, and Failure Modes and Effects analysis).

- Conduct NIF-related technology development and risk management activities necessary to achieve performance requirements. As appropriate, coordinate these activities with other organizations (e.g., Laser Science and Technology, Systems Engineering, Mission Support, etc.).
- In collaboration with Commissioning and Operations, IPTs, AIMS, Step Managers, and APMs, prepare and implement the acceptance and commissioning tests for their respective areas consistent with the appropriate requirements.
- Support the NIF Safety and Performance Review Board (NIF Project Procedure 9.3).
- Develop, execute and report progress against integrated IPS/NPS plans for their NIF deliverables. This includes preparing, committing to, and managing Control Account Plans, and maintaining them through the Project change control processes.
- Ensure that all work adheres to NIF procedures, including design work, design reviews, procurement and procurement reviews, configuration management, etc.
- Work with the NIF QA organization to develop, implement, and maintain a NIF compliant, cost effective QA/QC Program. Ensure that appropriate work controls are in place for Quality Level 1 and 2 items.
- Ensure that all the NIF equipment, offline equipment and support facilities within their responsibility meets applicable ES&H and other regulatory requirements. Identify and implement institutional and NIF Project work controls, or if none exist for a specific situation, establish work controls to carry out their ISM responsibilities.
- Serve as AI (e.g., development and assembly work not covered by the NPSSP) when so delegated by the NIF Project Manager. The BIS APM serves as AI for site areas delegated by the Project Manager.
- Serve as the primary RI at the NIF site, delegating the RI role to their subordinate managers as appropriate. When not directly acting as the RI, concur on IWSs covering work to be performed by their organization.
- Ensure the qualification and training of their managers and workers to perform their assigned responsibilities.

The NIF Product APMs and their associated scopes are:

- **Beampath Infrastructure System (BIS)**—responsible for the NIF Conventional Facilities, including their maintenance and operations: Laser and Target Area Building, Optics Assembly Building, central plant, and site upgrades; and the Beampath Infrastructure System consisting of the utility systems, support structures, vessels, and beam tubes (NWBS N.F, N.U, N.L.3.3, N.T.4 (less N.T.4.3), and N.T.5.2.2). The CF/BIS APM will also direct the Construction Manager (CM) and the Integration Management and Installation (IMI) Contractor as the Contracting Officer's Technical Representative.
- **Line Replaceable Units (LRUs)**—responsible for the Injection Laser System (ILS) (NWBS N.L.1.1), which includes the master oscillator room, preamplifier module, preamplifier beam transport, preamplifier structure, input sensor package, and the back reflection sensor; the laser amplifier system (NWBS N.L.1.3), which includes the pulsed power conditioning, amplifier, and amplifier cooling systems; the Beam Transport/Diagnostics system (NWBS N.L.1.2, N.L.2, N.L.3.1, and N.L.3.4) including the main laser optical system, multiplexed diagnostics, 1 ω optical transport, laser-to-target alignment, and laser system beam control and diagnostics; and the integrated optics module, final optics assembly, calorimeter, phase plates, ghost elimination hardware, and associated control systems. The LRU APM is also responsible for the Target Chamber and Support Systems (N.T.5.2.3), comprising the first wall, environmental protection system, auxiliary systems, and safety systems.
- **Laser Materials and Optics Technology (LMOT)**—responsible for development, facilitization, and production of the NIF large-aperture optics. This includes procurement, process and materials trouble shooting, QC inspection, production tracking and shipping of: (1) laser amplifier glass, (2) lenses and windows, (3) mirrors and polarizers, and (4) KDP and DKDP crystal plates.
- **Integrated Computer Control Systems (ICCS)**—responsible for the hardware and software engineering, including independent verification, of the NIF integrated computer system (NWBS N.C, N.L.4, N.T.7, N.T.8.2, N.T.3, and control system elements within N.L.1.1, N.L.1.2, and N.L.1.3), consisting of supervisory, control system timing, safety interlocks and access controls, computers and network hardware, control room, target diagnostics controls, and classified systems.
- **Assembly, Installation, and Refurbishment (AIR)**—responsible for the assembly, installation, and refurbishment of NIF line replaceable units (LRUs) including large optics processing. These responsibilities

include: management and operation of NIF assembly and refurbishment facilities (Optics Assembly Building, Optics Processing Development Laboratory, parts of B391, and the preamplifier module maintenance area), as well as development and implementation of production plans and strategies, staffing plans, training and qualification programs, and the AIR quality program. The AIR APM is responsible for ensuring that AIR facilities and operations are in accordance with all applicable ES&H and ISM requirements. The AIR APM is also responsible for the assembly and refurbishment equipment project element (N.A.2.0) and the transport and handling equipment project element (N.A.1.0). The AIR APM also functions as the AIR AIM.

- **Target Experimental Systems (TES)**—responsible for the Target Diagnostics (NWBS N.T.1, N.T.2, N.T.3, N.T.5.2.1, N.T.6, N.T.9, and N.T.8), which includes the positioners/manipulators, laser on-target diagnostics, and classified and unclassified diagnostics.

Associate Project Managers—NIF Project Steps

The NIF Project Steps are Project execution processes encompassing mission definition, requirements definition, research and development, engineering, production, and commissioning/operations. The NIF Step organizations responsible for providing the processes to execute these Steps are Mission Support, Engineering Services, Laser Equipment Production, and Commissioning & Operations. The Project Step APMs report to the NIF Project Manager and are responsible to:

- Provide infrastructure required to execute process responsibilities.
- Support the Line Organization, the IPTs and APMs with all resources necessary to meet their obligations.
- Manage staff required to coordinate and implement all process responsibilities.
- Develop, review, and update NIF process standards to ensure adequate guidance for effective and efficient project execution.
- Interface with the APM organizational elements to assure that planning for Step activities are coordinated and integrated with other organizational elements.
- Implement and maintain a QA/QC Program that will, in a cost-effective manner, ensure that hardware and software deliverables will be deployed according to NIF standards and will meet essential functional and performance requirements.

The Project Step APMs and their associated responsibilities are:

- **Mission Support**—responsible for interfaces with the NIF user community to coordinate their requirements and NIF deployment plans. The Mission Support Step manager will represent the interests of the users to the NIF Project during planning (e.g., sequencing of commissioning in order to provide the best early capability with respect to the user needs), commissioning, and operation. This responsibility includes developing (with Shot Operations) the experimental plan that best meets the user community needs.
- **Engineering Services**—responsible for defining the process, procedures, and deliverables for the Engineering Step of the NIF Project. This position is also responsible for associated functions that aid or are required for the completion of the engineering Step. These associated functions include managing the designer staff, component engineering, CAD databases, and process and procedures for configuration management.
- **Laser Equipment Production**—responsible for the procurement and production of the NIF equipment. This includes the development and implementation of production strategies, preparation and management of production contracts, and the operation of NIF receiving and storage functions and the associated production control functions. The LEP Manager serves as AI for areas delegated by the Project Manager.
- **Commissioning & Operations**—responsible for commissioning and operation of the NIF. The Commissioning responsibilities include preparation of the commissioning plan and providing guidelines for test procedure content and the levels of testing for equipment and subsystems at the various phases of commissioning and management of the commissioning of the laser system and target bay systems. The Operations responsibilities include: management of the Operations personnel who will participate in the commissioning activities; the planning and conduct of the operations and maintenance of the Laser and Target Area Building and some other NIF support facilities; implementation of all safety requirements per the LLNL ISM Plan; development and implementation of training and operator qualification programs; control of security and access to NIF facilities when operational.

Project Support Staff

The **NIF Program Business Manager** is responsible for the fiscal and business management functions of the Project. The Program Business Manager reports to the NIF Program Associate Director's Office and will:

- Be responsible for planning, coordinating, and implementing the total direct and indirect budgets for the NIF Project and related NIF Programs activities.
- Manage and coordinate the development and implementation of the required internal Project and Program financial planning and control processes, procedures, and systems. This includes the financial planning and tracking tools, as well as the contract funds management.
- Serve as the primary contact for financial activities with DOE-HQ, DOE-OAK, and other sponsors such as the British Ministry of Defense (MOD), the French Commissariat à l'Energie Atomique (CEA), and other institutions and laboratories in the DOE complex.
- Coordinate and act as the primary point of contact for the generation, maintenance, and submission of the fiscal and budgetary aspects of all documents related to the Project's fiscal and budget activities, including the Project Data Sheet, Field Budget Submission, and high-level baseline change actions.

The **Project Administrator** provides administrative functions and assistance in support of the Project and provides full supervision to the Project administrative staff. He/she coordinates assignments for ongoing tasks of mutual benefit and assists in the dissemination of information on Project activities. The Project Administrator reports to the Project Manager and will:

- Manage the Project's administrative staff and coordinate administrative functions in the Project Office.
- Manage Project files and documents; working with the Quality Assurance Manager, maintain the Project QA File (master file).
- Coordinate the Project's appraisal, ranking, and salary management process.
- Manage and coordinate the personnel recruiting functions.
- Coordinate and facilitate Project administrative functions (e.g., training, security, document control, correspondence, classified document accountability, affirmative action, supplemental labor, workforce and space planning) and ensure compliance with LLNL policies and procedures and formulate and implement administrative policies.

The **ES&H Assurance Manager** is responsible for the environmental, safety, health, and security plans and evaluations of the NIF Project. He/she reports directly to the Project Manager. The Manager will:

- Prepare and ensure implementation of the ES&H Management Plan and the NPSSP. Develop the NIF ALARA (as low as reasonably achievable) Program, Security Plan, ES&H Risk Management Plan, and Operational Safety Requirements (OSRs) with the Associate Project Manager for Commissioning and Operation.
- Be responsible for NIF NEPA policies, documentation, permits and actions.
- Perform safety analyses of NIF construction and operation (Preliminary Hazards Analysis, Preliminary Safety Analysis Report, and Final Safety Analysis Report with OSRs).
- Work with the Site Manager to coordinate the development of core work procedures and standards for working on the NIF site (e.g., JHAs, access training, work authorization).
- With the Operations Manager, co-chair the Safety and Performance Review Board.
- Provide monitoring to assure that all applicable federal, state, local and LLNL ES&H regulations are followed.
- Oversee the NIF Occurrence and Incident Reporting Program for the NIF Project site.
- Interface with the DOE OAK ES&H Manager on all assurance issues.

The **Quality Assurance Manager** is responsible for planning, implementing, and auditing QA/QC-related activities on the Project. The QA Manager reports to the Project Manager and will:

- Prepare and lead the implementation of the NIF Project QA Program Plan and ensure that it meets the requirements of applicable DOE Orders and the Code of Federal Regulations.

- With the Systems Engineering/Mission Support Organization, develop and document quality-level criteria to implement graded quality assurance.
- Prepare the implementation procedures in the Project Control Manual.
- Establish a Problem Identification and Correction (PIC) System and ensure that it is implemented.
- Verify closure of MPR Type A findings and periodically review Type B findings entered into the PIC system to assure closure progress.
- With the Commissioning and Operations Managers, develop a project quality training and orientation program for Project personnel and provide the training system.
- Maintain the QA File.
- Verify the quality of Project and contractor work by audit and independent Management Review.
- Provide management with Project quality achievement status and recommend means of improving quality performance.

Acronyms

AD	Associate Director
AI	Authorizing Individual
AIM	Area Integration Manager
AIR	Assembly, Installation & Refurbishment
AIT	Area Integration Team
ALARA	As Low As Reasonably Achievable
APM	Associate Project Manager
BCCB	Baseline Change Control Board (also CCB)
BIS	Beam Infrastructure System
BSCR	Budget/Schedule Change Request
CAP	Control Account Plan
CCB	Change Control Board (also BCCB)
DOE	Department of Energy
DOE-HQ	Department of Energy Headquarters
DOE-OAK	Department of Energy Oakland Operations Office
ECR	Engineering Change Request
EPAC	Experimental Planning Advisory Committee
ES&H	Environment, Safety & Health
FAM	Field Area Manager
FPOC	Facility Point of Contact
FSAR	Final Safety Analysis Report
ICCS	Integrated Computer Control System
ICD	Interface Control Document
IPS	Integrated Project Schedule
IPT	Integrated Product Team
ISM	Integrated Safety Management
IWS	Integration Work Sheet
JHA	Job Hazard Analysis
LMOT	Laser Materials and Optics Technology
LRU	Line Replaceable Unit
MPR	Management Prestart Review
MRB	Material Review Board
NCR	Non Conformance Report
NEPA	National Environmental Policy Act
NIF	National Ignition Facility
NNSA	National Nuclear Security Administration
NPS	NIF Planning System
NPSSP	NIF Project Site Safety Plan
NWBS	NIF Work Breakdown Structure
OSP	Operational Safety Procedure
OSR	Operational Safety Requirements
PC/FR	Primary Criteria/Functional Requirements
PIC	Problem Identification and Correction
QA	Quality Assurance
QC	Quality Control
RI	Responsible Individual
S&PRB	Safety and Performance Review Board
SDR	System Design Requirements
SPA	Safe Plan of Action
SSC	Systems, Subsystems & Components
SSDR	Subsystem Design Requirements